

What Is Claimed Is:

1. A redundancy management method for BIOS,
comprising the steps of:

5 using one of a pair of memories, which respectively
store the BIOS for setting hardware in an environment in
which OS can use said hardware, for operation and the other
for standby;

switching to the BIOS in said memory in standby
when the BIOS in said one memory cannot be booted; and
10 executing an update of said BIOS by writing to said
memory in standby.

2. The redundancy management method for BIOS
according to Claim 1, further comprising a step of permitting
15 switching said memory in standby to in operation when the
update of said BIOS in said memory in standby succeeded.

3. The redundancy management method according to
Claim 2, further comprising a step of switching said
20 permitted memory in standby to in operation, and said memory
in operation to in standby when said hardware is started up.

4. The redundancy management method for BIOS
according to Claim 3, further comprising a step of writing
25 the BIOS of said memory switched to operation, to said memory
switched to standby for redundancy after said switching.

5. The redundancy management method for BIOS
according to Claim 1, further comprising a step of preventing
switching of said memory in standby to said memory in
operation when the update of said BIOS in said memory in
5 standby failed.

6. The redundancy management method for BIOS
according to Claim 4, further comprising a step of preventing
switching said memory switched to standby, to said memory in
10 operation when writing of said BIOS in said memory switched
to standby failed.

7. The redundancy management method for BIOS
according to Claim 3, further comprising a step of preventing
15 execution of said switching when said hardware is started up
for power recovery.

8. The redundancy management method for BIOS
according to Claim 4, further comprising a step of preventing
20 execution of said redundancy step when said hardware is
started up for power recovery.

9. The redundancy management method for BIOS
according to Claim 1, further comprising a step of executing
25 the update of BIOS in a memory in standby of another hardware
connected with said hardware according to the update of the
BIOS in said memory in standby of said hardware.

10. The redundancy management method for BIOS according to Claim 1, further comprising a step of executing the synchronization processing of the BIOS with another hardware connected with said hardware.

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11. A data processing apparatus, comprising:

a hardware including a CPU;

a pair of memories which respectively store a BIOS for setting said hardware in an environment in which OS can

10 use said hardware; and

a service processor for using one of said pair of memories for operation and the other for standby when said hardware is started up and switching to the BIOS in said memory in standby when the BIOS of said one memory cannot be

15 booted,

wherein said CPU executes the update of said BIOS by writing to said memory in standby.

12. The data processing apparatus according to Claim 20 11, wherein said service processor permits switching said memory in standby to said memory in operation when the update of said BIOS in said memory in standby succeeded.

13. The data processing apparatus according to Claim 25 12, wherein said service processor switches said permitted memory in standby to a memory in operation, and said memory

in operation to said memory in standby when said hardware is started up.

14. The data processing apparatus according to Claim
5 13, wherein said CPU writes the BIOS of said memory switched to operation, to said memory switched to standby for redundancy after said switching.

15. The data processing apparatus according to Claim
10 11, wherein said CPU prevents switching said memory in standby to the memory in operation when the update of said BIOS in said memory in standby failed.

16. The data processing apparatus according to Claim
15 14, wherein said CPU prevents switching said memory switched to standby, to said memory in operation when writing of said BIOS in said memory switched to standby failed.

17. The data processing apparatus according to Claim
20 11, further comprising another hardware connected with said hardware, and

said hardware executes the update of the BIOS in the memory in standby of said other hardware connected with said hardware according to the update of the BIOS in said memory
25 in standby of said hardware.

18. The data processing apparatus according to Claim 11, wherein said hardware executes the synchronization processing of the BIOS with said other hardware connected with said hardware.

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19. A storage system, comprising:

a storage control apparatus comprises:

a hardware including a CPU;

a pair of memories which respectively store a BIOS for setting said hardware in an environment in which OS can use said hardware; and

a service processor for using one of said pair of memories for operation and the other for standby when said hardware is started up and switching to the BIOS in said memory in standby when the BIOS of said one memory cannot be booted; and

a plurality of storage devices connected to said storage control device,

wherein said CPU of said storage control apparatus executes the update of said BIOS by writing to said memory in standby.

20. The storage system according to Claim 19, wherein said service processor of said storage control apparatus permits the switching of said memory in standby to said memory in operation when the update of said BIOS in said memory in standby succeeded.

21. The storage system according to Claim 20, wherein
said service processor of said storage control apparatus
switches said permitted memory in standby to a memory in
5 operation, and said memory in operation to said memory in
standby when said hardware is started up.

22. The storage system according to Claim 21, wherein
said CPU of said storage control apparatus writes the BIOS of
10 said memory switched to operation, to said memory switched to
standby for redundancy after said switching.

23. The storage system according to Claim 19, wherein
said CPU of said storage control apparatus prevents switching
15 said memory in standby to the memory in operation when the
update of said BIOS in said memory in standby failed.

24. The storage system according to Claim 22, wherein
said CPU of said storage control apparatus prevents switching
20 said memory switched to standby, to said memory in operation,
when writing of said BIOS in said memory switched to standby
failed.

25. The storage system according to Claim 19, further
25 comprising another storage control apparatus, which is
connected to said storage devices and said storage control
apparatus and for controlling said storage devices,

wherein said storage control apparatus executes the update of the BIOS in the memory in standby of said other storage control apparatus according to the update of the BIOS in said memory in standby of said storage control apparatus.

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26. The storage system according to Claim 19, further comprising another storage control apparatus, which is connected to said storage devices and said storage control apparatus and for controlling said storage devices,

10 wherein said storage control apparatus executes the synchronization processing of the BIOS with said other storage control apparatus.